KM 1012 : Vertical Gravity Band Saw
User Manual

www.ermaiersaws.com



ENGLISH

FOR MACHINES MFG. AFTER JAN 2010

V2.0:09.25.2014

Manufactured in North America by:
Racer Machinery International Inc.

TABLE OF CONTENTS

Understanding Risks of Machinery

Operating all machinery and machining equipment can be dangerous or relatively safe depending on how it is installed and maintained, and the operator's experience, common sense, risk awareness, working conditions, and use of personal protective equipment (safety glasses, respirators, etc.).

The owner of this machinery or equipment is ultimately responsible for its safe use. This responsibility includes proper installation in a safe environment, personnel training and usage authorization, regular inspection and maintenance and comprehension, application of safety devices, integrity of cutting tools or accessories, and the usage of approved personal protective equipment by all operators and bystanders.

The manufacturer of this machinery or equipment will not be held liable for injury or property damage from negligence, improper training, machine modifications, or misuse. Failure to read, understand, and follow the manual and safety labels may result in serious personal injury, including amputation, broken bones, electrocution, or death.

The signals used in this manual to identify hazard levels are defined as follows:

DANGER	Death or catastrophic harm WILL occur	**CAUTION**	Moderate injury or fie MAY occur
WARNING	Death or catastrophic harm COULD occur	***NOTICE***	Machine or property damage may occur

Basic Machine Safety

1 **Owner's Manual:** All machinery and machining equipment presents serious injury hazards to untrained users. To reduce the risk of injury, anyone who uses THIS item MUST read and understand this entire manual before starting.

2 **Personal Protective Equipment:** Operating or servicing this item may expose the user to flying debris, dust, smoke, dangerous chemicals, or loud noises. These hazards can result in eye injury, blindness, long-term respiratory damage, poisoning, cancer, reproductive harm or hearing loss. Reduce your risks from these hazards by wearing approved eye protection, respirator, gloves, or hearing protection.

3 **Trained/Supervised Operators Only:** Untrained users can seriously injure themselves or bystanders. Only allow trained and properly supervised personnel to operate this item. Make sure safe operation instructions are clearly understood. If electrically powered, use padlocks and master switches, and remove start switch keys to prevent unauthorized use or accidental starting.

4 **Guards/Covers:** Accidental contact with moving parts during operation may cause severe entanglement, impact, cutting, or crushing injuries. Reduce this risk by keeping any included guards/covers/doors installed, fully functional, and positioned for maximum protection.

5 **Entanglement:** Loose clothing, gloves, neckties, jewelry or long hair may get caught in moving parts, causing entanglement, amputation, crushing, or strangulation. Reduce this risk by removing/securing these items so they cannot contact moving parts.

6 **Mental Alertness:** Operating this item with reduced mental alertness increases the risk of accidental injury. Do not let a temporary influence or distraction lead to a permanent disability! Never operate when under the influence of drugs/alcohol, when tired, or otherwise distracted.

7 Safe Environment: Operating electrically powered equipment in a wet environment may result in electrocution; operating near highly flammable materials may result in a fire or explosion. Only operate this item in a dry location that is free from flammable materials.

8 **Electrical Connection:** With electrically powered equipment, improper connections to the power source may result in electrocution or fire. Always adhere to all electrical requirements and applicable codes when connecting to the power source. Have all work inspected by a qualified electrician to minimize risk.

9 **Disconnect Power:** Adjusting or servicing electrically powered equipment while it is connected to the power source greatly increases the risk of injury from accidental startup. Always disconnect power BEFORE any service or adjustments, including changing blades or other tooling.

10 **Secure Work piece/Tooling:** Loose work pieces, cutting tools, or rotating spindles can become dangerous projectiles if not secured or if they hit another object during operation. Reduce the risk of this hazard by verifying that all fastening devices are properly secured and items attached to spindles have enough clearance to safely rotate.

11 **Chuck Keys or Adjusting Tools:** Tools used to adjust spindles, chucks, or any moving/ rotating parts will become dangerous projectiles if left in place when the machine is started. Reduce this risk by developing the habit of always removing these tools immediately after using them.

12 **Work Area:** Clutter and dark shadows increase the risks of accidental injury. Only operate this item in a clean and well-lighted work area.

13 **Properly Functioning Equipment:** Poorly maintained, damaged, or malfunctioning equipment has higher risks of causing serious personal injury compared to those that are properly maintained. To reduce this risk, always maintain this item to the highest standards and promptly repair/service a damaged or malfunctioning component. Always follow the maintenance instructions included in this documentation.

14 **Unattended Operation:** Electrically powered equipment that is left unattended while running cannot be controlled and is dangerous to bystanders. Always turn the power ***OFF*** before walking away.

15 **Health Hazards:** Certain cutting fluids and lubricants, or dust/smoke created when cutting, may contain chemicals known to cause cancer, respiratory problems, birth defects, or other reproductive harm. Minimize exposure to these chemicals by wearing approved personal protective equipment and operating in a well-ventilated area.

16 **Difficult Operations:** Attempting difficult operations with which you are unfamiliar increases the risk of injury. If you experience difficulties performing the intended operation, **STOP!** Seek an alternative method to accomplish the same task, ask a qualified expert how the operation should be performed, or contact our Technical Support for assistance.

Additional Metal Bandsaw Safety

1 **Blade Condition.** A dull or damaged blade can break apart during operation, increasing the risk of operator injury. Do not operate with a dull, cracked or badly worn blade. Inspect the blade for cracks or missing teeth before each use.

2 **Hand Placement.** Hands could be cut by the blade or crushed when lowering the headstock. Never position fingers or thumbs in line with the cut or under the headstock while it is moving.

3 **Blade Guard.** Hands and fingers can easily be cut by the bandsaw blade. To reduce the risk of laceration injuries, do not operate this bandsaw without the blade guard in place.

4 **Starting Position.** To reduce the likelihood of blade breakage and possible entanglement, never turn the saw ***ON*** with the blade resting on the workpiece.

5 **Blade Replacement.** The blade can only make a safe and efficient cut if the teeth are facing the workpiece. When replacing blades, make sure the teeth face toward the workpiece. Wear gloves to protect hands and safety glasses to protect eyes.

6 **Workpiece Handling.** A shifting workpiece can result in impact or laceration injuries. To reduce the risk of injury, always securely clamp the workpiece in the vise and use additional support fixtures if needed. Never hold the workpiece with your hands during a cut. Flag long pieces to reduce the risk of tripping over them.

7 **Power Interruption.** Unplug the machine and turn the power switch ***OFF*** after a power interruption. If left plugged in and turned ***ON***, this machine will start up when power is restored, resulting in possible entanglement, laceration, or amputation hazards.

8 **Hot Surfaces/Sharp Edges.** Due to the cutting process, a freshly cut workpiece, chips, and some machine components can be hot enough to burn you and sharp enough to cut you. Allow components to cool and use safe handling methods to reduce the risk of these injuries.

9 **Moving Blade.** A moving bandsaw blade presents a serious risk for laceration or amputation injuries. Always allow the blade to come to a complete stop before mounting or repositioning a workpiece in the vise. Never touch a moving blade.

Preparation Overview

The purpose of the preparation section is to help you prepare your machine for operation. The list below outlines the basic process to follow to prepare your machine for operation. Specific steps for each of these points will be covered in detail later in this section.

The typical preparation process is as follows:

1 Unpack the machine and inventory the contents of the carton.
2 Clean the machine and its components.
3 Make any necessary adjustments or inspections to ensure the machine is ready for operation.
4 Connect the machine to the power source.
5 Test run the machine to make sure it functions properly and is ready for operation.

Required for Setup

The items listed below are required to successfully set up and prepare this machine for operation.

For Power Connection
A power source that meets the minimum circuit requirements for this machine. (Refer to the **Power Supply Requirements** section for details.)

A qualified electrician to ensure a safe and code-compliant connection to the power source.

Power Supply Requirements

Availability

Before installing the machine, consider the availability and proximity of the required power supply circuit. If an existing circuit does not meet the requirements for this machine, a new circuit must be installed.

To minimize the risk of electrocution, fire, or equipment damage, installation work and electrical wiring must be done by a qualified electrician in accordance with all applicable codes and standards.



WARNING

Electrocution or fire may occur if machine is not correctly grounded and attached to the power supply. Use a qualified electrician to ensure a safe power connection

Full-Load Current Rating

The full-load current rating is the amperage a machine draws at 100% of the rated output power. On machines with multiple motors, this is the amperage drawn by the largest motor or sum of all motors and electrical devices that might operate at one time during normal operations.

Full-Load Rating at 110V.................. 14 Amps
Full-Load Rating at 220V.................. 6.8 Amps

The full-load current is not the maximum amount of amps that the machine will draw. If the machine is overloaded, it will draw additional amps beyond the full-load rating.

If the machine is overloaded for a sufficient length of time, damage, overheating, or fire may result—especially if connected to an undersized circuit. To reduce the risk of these hazards, avoid overloading the machine during operation and make sure it is connected to a power supply circuit that meets the requirements in the following section.

A power supply circuit includes all electrical equipment between the main breaker box or fuse panel in your building and the incoming power connections inside the machine. This circuit must be safely sized to handle the full-load current that may be drawn from the machine for an extended period of time.

CAUTION

For your own safety and protection of property, consult a qualified electrician if you are unsure about wiring practices or electrical codes in your area.

Note: The circuit requirements listed in this manual apply to a dedicated circuit—where only one machine will be running at a time. If this machine will be connected to a shared circuit where multiple machines will be running at the same time, consult a qualified electrician to ensure that the circuit is properly sized for safe operation.

Circuit Requirements for 110V

This machine is prewired to operate on a 110V power supply circuit that has a verified ground and meets the following requirements:

Nominal Voltage 110V/120V
Cycle ....60 Hz
Phase ....Single-Phase
Circuit Rating...................................... 15 Amps
Plug/Receptacle (included) ....NEMA 5-15

Circuit Requirements for 220V

This machine can be converted to operate on a 220V power supply. To do this, follow the **Voltage Conversion** instructions included in this manual. The intended 220V circuit must have a verified ground and meet the following requirements:

Nominal Voltage 220V/240V
Cycle ....60 Hz
Phase ....Single-Phase
Circuit Rating...................................... 15 Amps
Plug/Receptacle ....NEMA 6-15

Grounding Requirements

In the event of certain types of malfunctions or breakdowns, grounding provides a path of least resistance for electric current—in order to reduce the risk of electric shock.

For 110V Connection (Prewired)

This machine is equipped with a power cord that has an equipment-grounding wire and a grounding plug (similar to the figure below). The plug must only be inserted into a matching receptacle (outlet) that is properly installed and grounded in accordance with all local codes and ordinances.

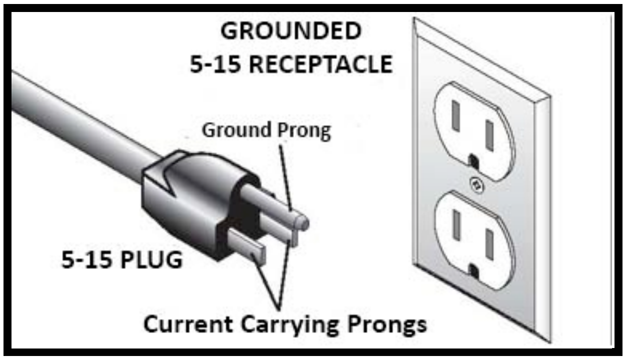


Figure 2. NEMA 5-15 plug and receptacle

For 220V Connection

Use the plug type listed in the **Circuit Requirements** for this voltage. The listed plug (similar to the figure below) has an equipment-grounding wire to safely ground the machine. The plug must only be inserted into a matching receptacle (outlet) that is properly installed and grounded in accordance with all local codes and ordinances.

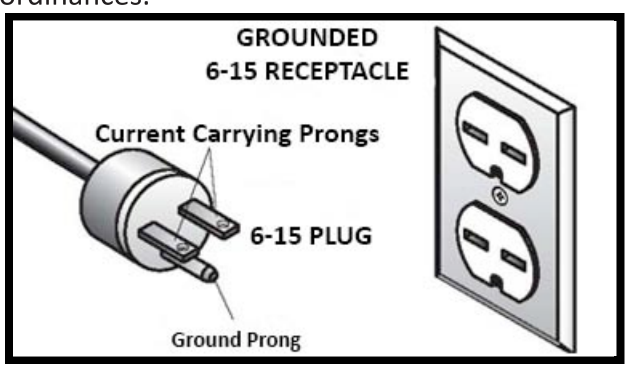


Figure 3. NEMA 6-15 plug and receptacle

WARNING

Series injury could occur if you connect the machine to power before completing the setup process. DO NOT connect to power until instructed later in this manual.

Improper connection of the equipment-grounding wire can result in a risk of electric shock. The wire with green insulation (with or without yellow stripes) is the equipment-grounding wire. If repair or replacement of the power cord or plug is necessary, do not connect the equipment-grounding wire to a live (current carrying) terminal.

Check with a qualified electrician or service personnel if you do not understand these grounding requirements, or if you are in doubt about whether the tool is properly grounded.

If you ever notice that a cord or plug is damaged or worn, disconnect it from power, and immediately replace it with a new one.

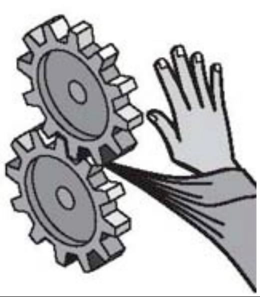
Extension Cords

We do not recommend using an extension cord with this machine. If you must use one, only use it if absolutely necessary and only on a temporary basis.

Extension cords cause voltage drop, which may damage electrical components and shorten motor life. Voltage drop increases as the extension cord size gets longer and the gauge size gets smaller (higher gauge numbers indicate smaller sizes).

Any extension cord used with this machine must contain a ground wire, match the required plug and receptacle listed in the **Circuit Requirements** for the applicable voltage, and meet the following requirements:

Minimum Gauge Size............................16 AWG
Maximum Length (Shorter is Better)....50 ft



WARNING

Loose hair, clothing, or jewelry could get caught in machinery and cause serious personal injury. Keep these items away from moving parts at all times to reduce this risk.



WARNING

During operation, small metal chips may become airborne, leading to serious eye injury. Wear safety glasses to reduce this risk.

Manufacturer Details

We stand behind our machines. If you have any questions, parts requests or general inquiries about the machine, feel free to contact us.

Racer Machinery International Inc. – Manufacturer of E-R Maier™ Saws.

Headquarters (CANADA)
Cambridge, Ontario N3H 4R7
T: +1 (519) 623 6223
F: +1 (519) 623 1122
Web: www.ermaiersaws.com

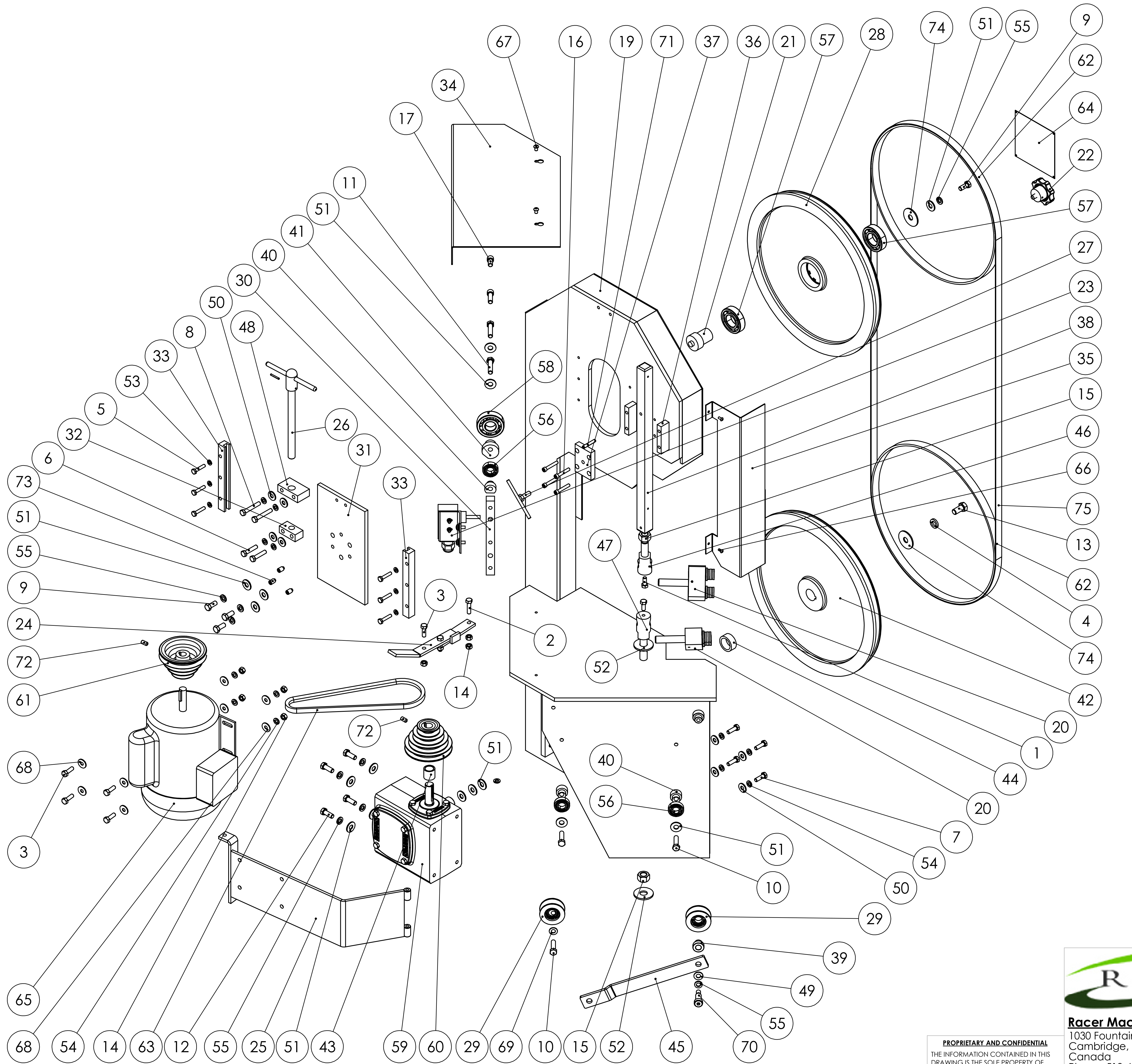
Sales Office (USA)
Williamsville, NY 14221
T: +1 (716) 462 6224

KM 1012 : Vertical Gravity Band Saw
Exploded Diagrams

www.ermaiersaws.com

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	HBOLT 0.3125-18x0.75x0.75-N		2
2	HBOLT 0.3125-18x1.25x0.875-N		1
3	HBOLT 0.3125-18x1x0.875-N		5
4	Heavy LW 0.5		1
5	HFBOLT 0.25-20x1.25x0.75-N		6
6	HFBOLT 0.3125-18x1.5x0.875-N		2
7	HFBOLT 0.3125-18x1x1-N		4
8	HFBOLT 0.3125-18x2x0.875-N		2
9	HFBOLT 0.375-16x0.875x0.875-N		4
10	HFBOLT 0.375-16x1.5x1-N		3

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
11	HFBOLT 0.375-16x1.75x1-N		2
12	HFBOLT 0.375-16x1x1-N		4
13	HFBOLT 0.5-13x1x1-N		1
14	HNUT 0.3125-18-D-N		7
15	HNUT 0.6250-11-D-N		2
16	HX-SHCS 0.25-20x1.5x1-N		4
17	HX-SHCS 0.375-16x0.75x0.75-N		1
18	HX-SHCS 0.375-16x1.25x1.25-N		1
19	KM1012-0003	Head Weldment ASM	1
20	KM1012-0017	Guide Roller ASM	2



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
21	KM1012-0020	Top Wheel Mount ASM	1
22	KM1012-0022	Fluted Knob ASM - Short	1
23	KM1012-0024	Limit Switch Assembly	1
24	KM1012-0025	Motor Handle ASM	1
25	KM1012-0026	Motor Mount ASM	1
26	KM1012-0027	Top Wheel Adj Hoist	1
27	KM1012-0028	Handle Bar Weld	1
28	KM1012-0030	Wheel Upper + Ret Ring	1
29	KM1012-0031	V Roller Assembly	2
30	KM1012-1028	Head Frame Wheel Bar	1
31	KM1012-1035	Top Wheel Adjuster Plate	1
32	KM1012-1042	Top Wheel Adjuster Plate1	1
33	KM1012-1043	Top Wheel Plate Slide	2
34	KM1012-1047	Rear Motor Cover	1
35	KM1012-1048	Guide Bar Blade Cover	1
36	KM1012-1050	Guide Retainer Part A	2
37	KM1012-1051	Guide Retainer Part B	1
38	KM1012-1052	Guide Bar	1
39	KM1012-1053	Bearing Mount Straight	1
40	KM1012-1055	Bearing Mount Cam	4
41	KM1012-1056	Bearing Mount Cam Lg	1
42	KM1012-1061	Drive Wheel Lower1	1
43	KM1012-1066	Gearbox Bushing	1
44	KM1012-1067	Bushing Lower Wheel	1
45	KM1012-1068	Counterweight Connector	1
46	KM1012-1073	Upper Guide	1
47	KM1012-1074	Lower Guide	1
48	KM1012-1075	Top Wheel Adj Block	1
49	Preferred Narrow FW 0.375		1
50	Preferred Wide FW 0.3125		8
51	Preferred Wide FW 0.375		15
52	Preferred Wide FW 0.625		2
53	Regular LW 0.25		6
54	Regular LW 0.3125		13
55	Regular LW 0.375		9
56	RMI-30002	Bearing 6003DD	3
57	RMI-30003	Bearing 6206DD	2
58	RMI-30004	Bearing 6305DD	1
59	RMI-30020	Gearbox Speed Reducer 40:1	1
60	RMI-30021	Gear Box Pulley	1
61	RMI-30022	Motor Pulley	1
62	RMI-30023	Rubber Band 3/16"x3/4"x44.5" BLK NEO	2
63	RMI-30024	V Belt 4L290	1
64	RMI-30032	Name Plate	1
65	RMI-50054	1HP Electric Motor	1
66	SBHCSCREW 0.164-32x0.375-HX-N		2
67	SBHCSCREW 0.25-20x0.375-HX-N		2
68	Selected Narrow FW 0.312		8
69	Selected Narrow FW 0.375		2
70	SHSSCREW 0.5x1-N		1
71	SPS 0.25x1.5		1
72	SSFLATSKT 0.3125-18x0.625-HX-N		2
73	SSHDOGSKT 0.375-16x0.625-HX-N		3
74	Wide FW 0.5		2
75	RMI-30042	Saw Blade	1

Racer Machinery Int'l Inc.
1030 Fountain St. N.
Cambridge, Ontario, N3H 4R7
Canada
Phone: 519-623-6223
Fax: 519-623-1122
www.racerinternational.com

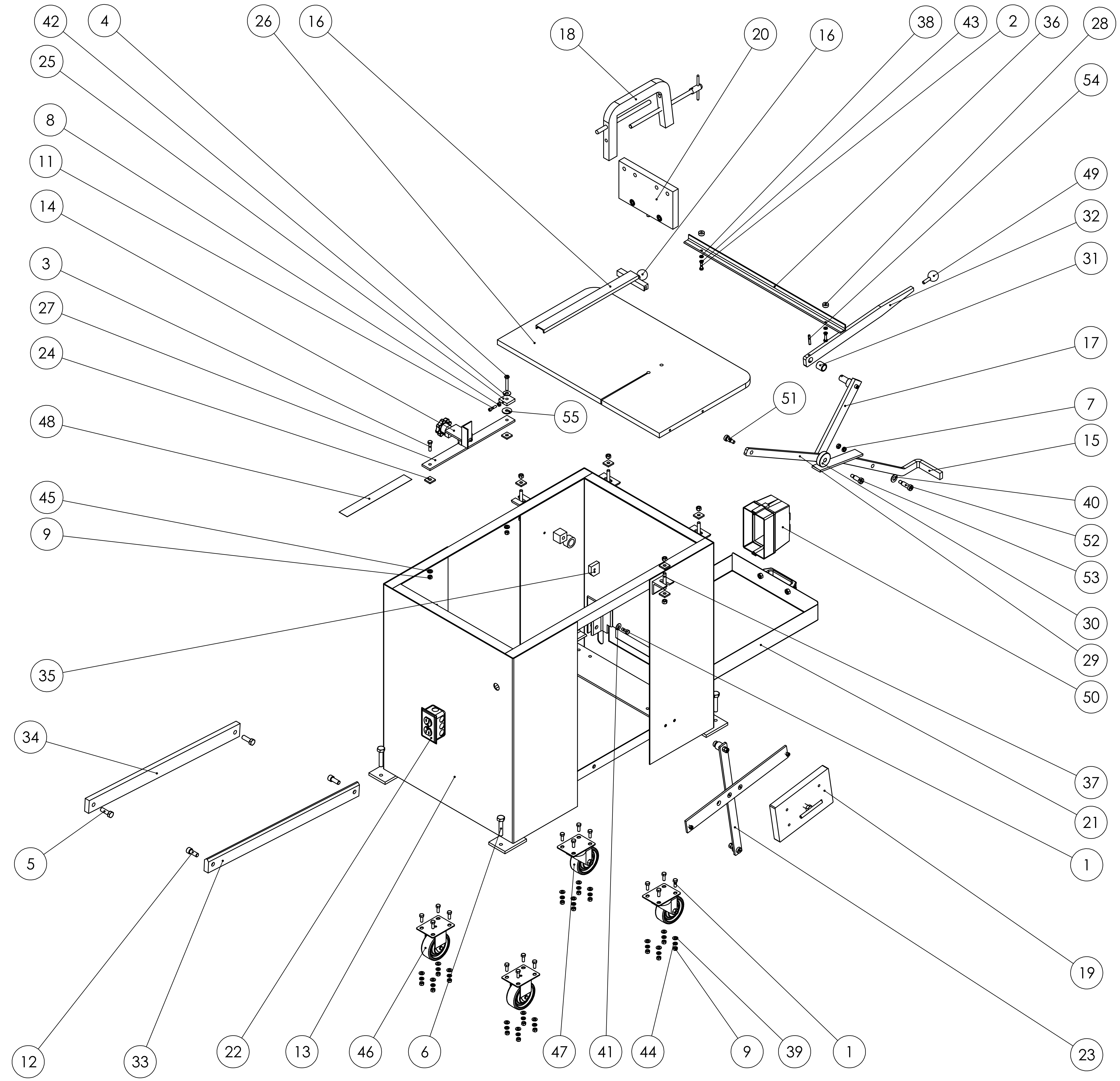
UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN MM
TOLERANCES:
X - +/- 0.1
X.X - +/- 0.1
X.XX - +/- 0.02
INTERPRET GEOMETRIC TOLERANCING PER:
MATERIAL N/A
FINISH
DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	lpop	1/30/2014
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		

Racer Machinery International Inc.
TITLE:
Head Assembly (KM1012)
KM1012-0004

SIZE C DWG. NO. KM1012-0004 REV B-46
SCALE: 1:7.5 WEIGHT: 121174.42 SHEET 2 OF 2

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	HBOLT 0.3125-18x0.875x0.875-N		17
2	HFBOLT 0.25-20x0.875x0.875-N		2
3	HFBOLT 0.3125-18x1.25x0.875-N		1
4	HFBOLT 0.3125-18x2x0.875-N		1
5	HFBOLT 0.5-13x1.5x1.25-N		2
6	HHBOLT 0.5000-13x2.5x1-N		4
7	HJNUT 0.3750-16-D-N		2
8	HNUT 0.2500-20-D-N		1
9	HNUT 0.3125-18-D-N		18
10	HNUT 0.3750-16-D-N		8
11	HX-SHCS 0.25-20x1x1-N		1
12	HX-SHCS 0.5-13x1.25x1.25-N		2
13	KM1012-0002	Base Weldment (KM1012)	1
14	KM1012-0007	Limit Block ASM	1
15	KM1012-0009	Foot Pedal ASM	1
16	KM1012-0010	Guide Bar ASM	1
17	KM1012-0013	Handle Inside Arm Asm	1
18	KM1012-0014	C Clamp ASM	1
19	KM1012-0015	Counterweight ASM	1
20	KM1012-0016	Mitre Block ASM	1
21	KM1012-0018	Tray ASM	1
22	KM1012-0032	Duplex Receptacle Assembly	1
23	KM1012-0041	Counterweight Arms ASM	1
24	KM1012-2001	Washer Square	10
25	KM1012-2013	Ruler Stop	1
26	KM1012-2014	Saw Table	1
27	KM1012-2015	Ruler Plate	1
28	KM1012-2017	Spacer Table Front	2
29	KM1012-2044	Handle Connector Bar	1
30	KM1012-2045	Handle Roller	1
31	KM1012-2046	Handle Bushing	1
32	KM1012-2047	Handle	1
33	KM1012-2066	Frame Rail Beveled	1
34	KM1012-2067	Frame Rail	1
35	KM1012-2068	Pedal Lock	1
36	KM1012-2069	Angle Table Side	1
37	KM1012-2071	.375-16UNC THRD_ROD	4
38	Narrow FW 0.25		2
39	Preferred Narrow FW 0.3125		16
40	Preferred Narrow FW 0.5		1
41	Regular FW 0.3125		1
42	Regular FW 0.375		1
43	Regular LW 0.25		2
44	Regular LW 0.3125		16
45	Regular LW 0.375		2
46	RMI-30033	Rigid Caster 4" x 1.5" Rollx	2
47	RMI-30034	Swivel Caster 4" x 1.5" Rollx	2
48	RMI-30037	E-R Maier Ruler	1
49	RMI-30040	Knob 35mm Dia 3/8-16 UNC	1
50	RMI-50081	Motor Starter 120V 1 HP	1
51	SHSSCREW 0.5x0.625-N		1
52	SHSSCREW 0.5x1.25-N		1
53	SHSSCREW 0.5x1-N		1
54	SPS 0.25x1.5		1
55	Wide FW 0.375		1



Racer Machinery Int'l Inc.
1030 Fountain St. N.
Cambridge, Ontario, N3H 4R7
Canada
Phone: 519-623-6223
Fax: 519-623-1122
www.racerinternational.com

UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN MM TOLERANCES: X - +/- 0.1 X.X - +/- 0.1 X.XX - +/- 0.02	DRAWN	lpop	1/21/2014
	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
MATERIAL –	COMMENTS:		
FINISH			
DO NOT SCALE DRAWING			

Racer Machinery International Inc.

TITLE:
Base Assembly (KM1012)
KM1012-0001

SIZE	DWG. NO.	REV
C	KM1012-0001	B-43

SCALE: 1:11 WEIGHT: 169995.19 SHEET 2 OF 2

Manufacturer Details

We stand behind our machines. If you have any questions, parts requests or general inquiries about the machine, feel free to contact us.

Racer Machinery International Inc. – Manufacturer of E-R Maier™ Saws.

Headquarters (CANADA)
Cambridge, Ontario N3H 4R7
T: +1 (519) 623 6223
F: +1 (519) 623 1122
Web: www.ermaiersaws.com

Sales Office (USA)
Williamsville, NY 14221
T: +1 (716) 462 6224